

RASPBERRY PLANT NAMED 'PS-1764'

CROSS-REFERENCE TO RELATED APPLICATION

This application claims the benefit of U.S. Provisional Application No. 60/395,103, filed July 9, 2002.

CLASSIFICATION

The variety is botanically known as *Rubus idaeus*.

VARIETAL DENOMINATION

The new raspberry plant has the varietal name of 'PS-1764'.

BACKGROUND OF THE INVENTION

The present invention relates to a new and distinct fall bearing raspberry variety designated as 'PS-1764'. This new variety is a result of a controlled cross between 'PS-127' (U.S. Plant Patent No. 7,437) and 'Heritage'.

The seedling resulting from the aforementioned cross was selected from a controlled breeding plot near Watsonville, California. After its selection, the new variety was further asexually propagated in Monterey County and Santa Cruz County, California by dormant canes, roots and non-dormant root shoot cuttings. The new variety was then extensively tested over the next several years in fruiting fields in Monterey County and Santa Cruz County, California. This propagation has demonstrated that the combination of traits disclosed herein as characterizing the new variety are fixed and remain true to type through successive generations of asexual reproduction.

BRIEF SUMMARY OF THE INVENTION

'PS-1764' is primarily adapted to the climate and growing conditions of the central coast of California. This region provides the necessary year-round temperatures required for it to produce and maintain a strong vigorous plant with consistent fruit production from July through November on primocanes and in the ensuing year from May through July on the floricanes. The nearby Pacific Ocean provides the needed humidity and moderate

temperatures to maintain fruit quality during the production months. The new variety possesses the following traits in combination distinguishing it from other known and closely related commercial varieties in the region. The varieties which we believe to be most closely related to 'PS-1764' are 'PS-1070' (U.S. Plant Patent No. 11,073), and 'PS-1049'.

COMPARISON TO SIMILAR VARIETIES

In comparison to the similar variety 'PS-1049', 'PS-1764' differs by the following combination of characteristics. 'PS-1764' fall fruit production begins later with lighter July-August production as compared to 'PS-1049'. Floricane fruit production typically is slightly heavier in May yet similar in July as compared to 'PS-1049'. Primocanes are larger in diameter with laterals that are shorter in length as compared to 'PS-1049'. Primocanes of 'PS-1764' also differ by producing very little to no waxy coat on the surface as compared to 'PS-1049' which produces a strong waxy coat. Thorns are slightly shorter in length yet much more abundant along the cane as compared to 'PS-1049'. Thorn tips of 'PS-1764' are very light red-purple in color as compared to 'PS-1049' which tends to be medium red-purple. The foliage of 'PS-1764' is slightly darker green in color and slightly more broad than long as compared to 'PS-1049'. 'PS-1764' has nearly always 3 leaflets per leaf as compared to 'PS-1049' which tends to be nearly equally 3 to 5 leaflets per leaf. Leaf shape of 'PS-1764' tends to be mostly ovate while 'PS-1049' tends to be more cordate in shape. The fruit of 'PS-1764' is larger in size, lighter in color with larger yet fewer druplets per berry as compared to 'PS-1049'. The skin is slightly weaker yet glossier than 'PS-1049'. Seeds are also larger in size as compared to 'PS-1049'.

In comparison to the similar variety 'PS-1070', 'PS-1764' differs by the following combination of characteristics. 'PS-1764' fall fruit production begins much later with lighter July-August production as compared to 'PS-1070'. Floricane fruit production typically is slightly lighter in May yet heavier in July as compared to 'PS-1070'. Primocanes are taller in height, larger in diameter with laterals that are slightly longer in length as compared to 'PS-1070'. Primocanes of 'PS-1764' also differ by producing very little to no waxy coat on the surface with also little to no anthocyanins as compared to 'PS-1070' which produces a medium waxy coat with medium anthocyanins. Thorns are slightly longer in length yet much

more abundant along the cane as compared to ‘PS-1070’. Thorn tips of ‘PS-1764’ are very light red-purple in color as compared to ‘PS-1070’ which tends to be medium red-purple. The foliage of ‘PS-1764’ is slightly darker green in color, slightly more broad than long with longer petioles as compared to ‘PS-1070’. Leaf shape of ‘PS-1764’ tends to be mostly ovate while ‘PS-1070’ tends to be more cordate in shape. The fruit of ‘PS-1764’ is much larger in size, more conical in shape with larger druplets per berry as compared to ‘PS-1070’. The skin is slightly weaker yet glossier with better overall appearance than ‘PS-1070’. Seeds are also larger in size as compared to ‘PS-1070’.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying color photographs show typical specimens of the new variety at various stages of development as nearly true as it is possible to make in color reproductions. The depicted plant and plant parts were approximately 6 to 9 months old:

Fig. 1 is a photograph of fruit taken in the month of June;

Fig. 2 is a photograph showing typical fruit characteristics taken in the month of September;

Fig. 3 is a photograph showing typical leaf characteristics taken in the month of August;

Fig. 4 is a photograph of primocane foliage taken in the month of June; and

Fig. 5 is a photograph showing typical primocane and flower characteristics taken in the month of September.

DETAILED BOTANICAL DESCRIPTION

The following description of 'PS-1764' unless otherwise noted, is based on observations taken in Watsonville, California. These measurements and ratings were taken from plants dug from a nursery located in Monterey County, California during the middle of November and planted approximately 3 to 4 weeks later in Watsonville, California. The approximate age of the observed plants were 8 to 9 months old. Yield observations and fruit quality characteristics are averaged from data collected during the 1998 through 2002 production seasons. The phenotypical descriptions, measurements and color designations stated for the new variety may vary, depending upon variations in environmental factors, including weather (temperature, humidity and light intensity), day length, soil type, location and cultural conditions. 'PS-1764' has not been observed under all possible environmental conditions. Color terminology where noted follows the Munsell Book of Colors, Munsell Color, Baltimore, Maryland (1976).

FRUIT CHARACTERISTICS

Table 1

1998 - 2002 average market fruit yield and fruit size characteristics of 'PS-1764' with standards from Watsonville, California.

| Character | 'PS-1764' | 'PS-1049' | 'PS-1070' |
|--|-----------|-----------|-----------|
| Primocane Yield July - August mean (gm/pl) | 265 | 512 | 860 |
| Primocane Yield Season Total mean (gm/pl) | 1864 | 1721 | 1510 |
| Floricane Yield May mean (gm/pl) | 117 | 45 | 189 |
| Floricane Yield July mean (gm/pl) | 811 | 856 | 390 |
| Floricane Yield Season Total mean (gm/pl) | 2526 | 1740 | 1613 |
| Primocane Fruit Size mean (gms) | 3.7 | 2.8 | 2.4 |
| Floricane Fruit Size mean (gms) | 3.6 | 2.5 | 2.2 |

Fruit was harvested from July through October (primocanes) and May through July (floricanes).

Table 2

Comparison of mature fruit characteristics of 'PS-1764', with standards from Watsonville, California, September 18, 2002

| Character | 'PS-1764' | 'PS-1049' | 'PS-1070' |
|-------------------------------------|-------------------|---------------|--------------------|
| Munsell Color Range mature fruit | 7.5R 3/12 to 4/12 | 5R 3/6 to 3/8 | 7.5 R 4/10 to 3/10 |
| Fruit Length mean (cm) | 2.3 | 2.2 | 1.8 |
| Fruit Width mean (cm)* | 2.1 | 2.0 | 1.8 |
| Fruit Length/Width Ratio | 1.1 | 1.1 | 1.0 |
| Calyx Diameter mean (cm) | 2.8 | 2.6 | 2.4 |
| Druplets/Berry mean | 68 | 79 | 62 |
| Seed Weight mean (mgs) | 1.6 | 1.3 | 1.4 |

* Width is measured across the widest part of the berry, typically across the shoulders

Table 3

Comparison of 1999 - 2002 primocane fruit quality characteristics of 'PS-1764' with Standards from Watsonville, California.*

| Character | 'PS-1764' | 'PS-1049' | 'PS-1070' |
|------------------|-----------|-----------|-----------|
| Skin Firmness | 7.8 | 8.7 | 8.3 |
| Fruit Appearance | 8.0 | 8.0 | 7.8 |
| Fruit Gloss | 8.2 | 7.6 | 7.8 |

* Results are averaged from 4 years of replicated fruit quality test performed from August through October 1999 - 2002. Ratings are based on a scale from 1-10; the higher the rating, the stronger the skin and more attractive and glossy the berry.

Fruit:

Size: -- large to very large

Ratio of length/width: -- slightly longer than broad

Predominant shape: -- conical

Color of mature fresh fruit: -- light red

Evenness of color: -- even

Glossiness: -- strong

Adherence of receptacle: --very weak

Firmness of flesh: -- firm to very firm

Firmness of skin: -- weak to medium

Receptacle size: -- medium to medium-large

Core cavity size: -- medium large to large

Druplet size: -- medium to large

Druplet arrangement around the berry: --slightly irregular

Primocane time of fruiting: -- late

Floricane time of fruiting: -- medium

Type of bearing: -- everbearing

PLANT CHARACTERISTICS

Table 4

Comparison of mature cane characteristics of 'PS-1764' compared with standards from Watsonville, California.

| Character | 'PS-1764' | 'PS-1049' | 'PS-1070' |
|--|----------------|----------------|----------------|
| PRIMOCANE | | | |
| August 31, 2002 | | | |
| Munsell Color Range | 5GY 6/6 to 5/6 | 5GY 7/4 to 6/4 | 5GY 6/6 to 7/6 |
| Length mean (m) | 1.8 | 1.9 | 1.4 |
| Lateral Length mean (cm) | 35.9 | 67.8 | 24.1 |
| Basal Diameter mean (mm) | 13.8 | 12.8 | 11.5 |
| Canes/Crown | 2.6 | 2.4 | 3.2 |
| Cane Diameter central 1/3 mean (mm) | 12.6 | 11.4 | 9.0 |
| Fruiting Laterals per cane | 16.8 | 16.3 | 13.6 |
| % of cane fruiting | 30.2 | 40.5 | 37.7 |
| Internode length central 1/3 mean (cm) | 3.6 | 5.1 | 4.3 |
| Thorn Length central 1/3 mean (mm) | 2.0 | 2.3 | 1.8 |
| Thorns/cm central 1/3 mean | 9.4 | 3.3 | 4.2 |
| FLORICANE | | | |
| May 30, 2002 | | | |
| Munsell Color Range | 5YR 3/6 to 4/6 | 5YR 4/4 to 4/6 | 5YR 5/4 to 6/4 |
| Length mean (m) | 1.49 | 1.2 | N/A |

Plant:

Habit: -- erect to very erect

Density: -- medium dense to dense

Size: -- medium large to large

Productivity: -- high

Primocanes/Floricanes:

Primocane color: -- medium to light green yellow

Primocane anthocyanin coloration: -- absent to very weak

Primocane thorn density: -- many

Floricane color: -- medium to dark yellow brown

Production of waxy coat: -- very thin to none

Young Shoots:

Number: -- medium

Anthocyanin coloration: -- absent to very weak

Thorn density: -- strong

Thorns:

Color (tip): -- 7.5RP 5/4 very light reddish purple

Color (base): -- light green yellow

Texture: -- rigid

Attitude of the tip: -- horizontal

FOLIAGE CHARACTERISTICS

Table 5

Comparison of mature leaf characteristics of 'PS-1764', compared with standards from Watsonville, California, August 15, 2002

| Character | 'PS-1764' | 'PS-1049' | 'PS-1070' |
|---|-------------------|------------------|----------------|
| Munsell Color Range (upper surface) | 7.5 GY 2/4 to 3/4 | 7.5GY 3/4 to 4/4 | 5GY 3/4 to 3/6 |
| Munsell Color Range (lower surface) | 5GY 6/2 to 7/2 | 5 GY 5/4 to 6/4 | 5GY 5/4 to 6/4 |
| Terminal Leaflet length mean (cm)* | 13.8 | 14.9 | 14.2 |
| Terminal Leaflet width mean (cm)* | 10.9 | 10.2 | 9.7 |
| Terminal Leaflet ratio (L/W) | 1.3 | 1.5 | 1.5 |
| Petiole Length mean (cm) | 7.4 | 7.2 | 5.7 |
| Petiole Width mean (mm) | 3.5 | 3.2 | 3.1 |
| Rachis Length** mean (cm) | 4.6 | 4.5 | 4.1 |
| Thorns/Petiole mean | 16.8 | 18.6 | 12.3 |
| Stipule Length mean (mm) | 9.8 | 10.1 | 8.8 |
| Lateral Leaflet basal pair length mean (cm) | 12.0 | 12.1 | 10.8 |
| Lateral Leaflet basal pair width mean (cm) | 7.2 | 7.2 | 7.0 |

* Terminal leaflets measurements are taken from a 3 leaflet leaf.

** Rachis length = length between the terminal leaflet and the adjacent lateral leaflets of a 3 leaflet leaf

Foliage:

Color of upper surface: -- medium to medium dark green

Color of under side:-- light to pale grey green

Shape in cross section: -- flat to strongly convex

Arrangement: -- compound

Relief between veins: -- medium to strong

Glossiness: -- medium

Number of leaflets/leaf:-- mostly to always three

Terminal Leaflet:

Size: -- medium to large

Shape: -- ovate

Length/width ratio: -- longer than broad

Shape of base: -- cordate

Shape of tip: -- acuminate

Margins: -- biserrate

Lateral Leaflet:

Size: -- medium to large

Shape: -- ovate

Overlapping: -- touching to free

Orientation: -- opposite

Shape of the base: -- obtuse

Shape of the tip: -- acuminate

Margins: -- biserrate

Rachis length: -- long

Petiole:

Texture: -- medium

Thorn orientation: -- erect

Anthocyanin coloration: -- absent to very weak

Stipule orientation: -- erect

FLOWERS

Table 6

Comparison of mature flower characteristics of 'PS-1764', compared with standards from Watsonville, California, August 23, 2002

| Character | 'PS-1764' | 'PS-1049' | 'PS-1070' |
|-----------------------------|-----------|-----------|-----------|
| Calyx Diameter mean (cm) | 3.0 | 2.6 | 2.1 |
| Petal Length mean (mm) | 7.5 | 6.9 | 6.6 |
| Petal Width mean (mm) | 4.4 | 3.5 | 2.9 |
| Petal Ratio (L/W) | 1.7 | 2.0 | 2.3 |
| Petals/Flower mean | 5.0 | 5.1 | 5.0 |
| Sepals/Flower mean | 5.3 | 5.0 | 5.1 |

Flowers:

Color: -- white

Size: -- medium to large

Size of calyx relative to corolla: -- larger

Relative position of petals: -- free

Petal length/width ratio: -- longer than broad to much longer than broad

PEST REACTIONS

This new variety may not be resistant to any of the known insects, diseases or viruses common in California. It is known to be moderately susceptible to the two-spotted spider mite. It is also known to be moderately susceptible to powdery mildew and highly susceptible to yellow rust. The susceptibility of the new variety to any of the virus complexes of California has not been determined.